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ABSTRACT

This course of study was designed to provide an instructional staff with a systematic plan of instruction to develop computer literacy. The introductory statements include the position that females as well as males must be encouraged to work with computers. Ten computer literacy goals are listed, followed by the scope and sequence section in which specific objectives are given and the grade levels in which each is to be introduced, reviewed, expanded, and applied are identified. An evaluation statement is also included. (MNS)

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DEER PARK COMMUNITY SCHOOLS

Computer Literacy Course of Study

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Rosemary Counts - Elementary
Ellen Dorsey - Jr. High/High School
Dorothy Evans - Jr. High
Patricia Heline - Primary
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COMPUTER LITERACY COURSE OF STUDY

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COMPUTER LITERACY COURSE OF STUDY

Introduction

The Computer Literacy Course of Study has been designed for students in the Deer Park Community School District. This document is the first attempt to provide our instructional staff with a systematic plan that provides for our definition of the concept of computer literacy, while listing in the scope and sequence section the objectives and the appropriate grade levels for their implementation.

The committee took on the enormous task of researching the current literature, reading courses of study from a number of districts nationwide, distilling and analyzing the enormous amounts of information gathered and applying the results to our school district. The end result is a course of study that the teacher will be able to use easily when planning his/her lessons for computer instruction/literacy. The committee consisted of the following professionals:

Rosemary Counts - Elementary
Ellen Dorsey - Jr. High/High School
Dorothy Evans - Jr. High
Patricia Heline - Primary
Chair: John E. Miller -
Director of Media Services

The committee wishes to thank Dr. Cavanaugh and Mr. Flury for their support. They would also like to state their appreciation to other staff members who gave advice concerning the course of study when it was in preparation.

The committee is pleased to recommend this Computer Literacy Course of Study to the Curriculum Committee and to the Board of Education for their adoption.

COMPUTER LITERACY COURSE OF STUDY

Philosophy

The philosophy of the Deer Park Community Schools states in part:

> "Education is not only preparation for life but life itself. The prime purpose of education is to stimulate intellectual curiosity in each individual leading to an ever increasing understanding of self and environment. The school helps develop and nurture attitudes which enable its students to live the most rewarding lives and to serve society to the best of their ability."

As we move through the last quarter of the twentieth century, sometimes called the "Age of High Technology" it is important for us as a school district to realize that in order to fulfill our district philosophy we must take a serious look at computer instruction.

The students in school today will spend most of their lives in the twenty-first century. Computers for those students are going to be - and in most cases already are - a fact of life. The Superintendent of Public Instruction for the state of Ohio recently stated that Reading and Computer Literacy are the two most important subject areas to be taught in our schools. It has been said that a computer illiterate will not be able to function effectively in the world of today - or tomorrow. Some educators have called computer literacy "the fourth R."

We in the Deer Park Community Schools view computer literacy as a necessary part of the total learning process. Students in the Deer Park Community Schools need to be prepared to access, use, and process information utilizing computers now and in the future. While in the schools students can use computers to enhance learning, improve writing skills, and develop analytical thinking. Students with all levels of ability can profit from the appropriate use of computer technology.

We must strive to introduce our students to technology so that they might remain its master rather than become subservient to it. There should be no feelings of fear or of intimidation concerning computers by our students as they take their places as citizens, leaders, and professionals in the twenty-first century.

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SEX EQUITY STATEMENT

One of the issues that have been addressed in the course of study and in all aspects of District Guidelines on the Computer Instruction is the issue of sex equity.

Deer Park Community Schools have purchased a large number of computers in recent years. Deer Park makes every effort to make sure males and females have equal access to the computers.

Studies show males rather than females tend to gravitate to computers. The studies also indicate that females, when given proper encouragement, are equally adept at computers. Females may find that computers can help in overcoming anxieties about success in math and science.

Deer Park encourages males and females to work on computers, believing that these opportunities are important in enhancing learning.

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COMPUTER LITERACY COURSE OF STUDY

Goals

I. The student will understand historical developments surrounding the evolution of computers from the inception to the present.

II. The student will be able to understand and explain the ethical and moral issues surrounding computer use and misuse.

III. The student will be able to demonstrate a working knowledge of computer terminology.

IV. The student will be aware of the impact that computers have had, and will continue to have on society.

V. The student will be able to operate a computer in a self-sufficient manner.

VI. The student will be able to explain how a computer functions.

VII. The student will develop a knowledge of computer applications in various career areas.

VIII. The student will acquire the operations skills necessary for entry into his/her chosen career or post-secondary educational program.

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COMPUTER LITERACY COURSE OF STUDY

I = Introduce concept/skill
R = Review/Reinforce concept/skill
E = Expand concept/skill
A = Application of concept/skill

Scope and Sequence

I. The student will understand historical developments surrounding the evolution of computers from their inception to the present.

A. The student will state (orally or in writing) the contributions made by each technological development to the evolution of a computer.

B. The student will discuss the recent developments in the field of computer technology.

C. The student will be able to list various computer languages and their applications.

D. The student will compare computers of the past to present day computers.

II. The student will be able to understand and explain the ethical and moral issues surrounding computer use and misuse.

	K	1	2	3	4	5	6	7	8	CP	CA
pre-electronic devices that contributed				I	I	R	R	E	E		
Eniac, the first computer					I	R	R	E	E		
transitional computers					I	R	R	E	E		
microcomputers				I	I	R	R	E	E	A	A
robotics				I	I	R	R	E		E	E
computer-aided design								I		R	R
portable computers					I	R	R	E		E	E
other new developments				I	I	I	I	I		I	I
								I	I	R	R
size					I	R	R				
cost					I	R	R				
capability and speed					I	R	R	E	E	E	E
reliability					I	R	R	E	E	E	E

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	K	1	2	3	4	5	6	7	8	CP	CA
A. Types of computer theft, i.e. software, technology, private records, monies, etc.						I	R	R		E	E
changes in society due to theft,						I	R	R		E	E
B. The student will state consequences of computer misuse.											
criminal consequences due to larcency or invasion of privacy						I	R	R		E	E
increased measures to protect against software copying						I	R	R		E	E
loss of companies interested in developing new software						I	R	R		E	E
C. The student will discuss the importance of copyright.											
the concept of copyright				I	I	R	R				
copyrighting software					I	R	R	E		E	E
D. The student will discuss the implications of data bases.								I		R	R
III. The student will be able to demonstrate a working knowledge of computer terminology.											
The student will be able to define and apply the following computer terms:											
computer, software, and hardware	I	I	R	R	R	R	R	R	R	E	E
monitor, keyboard, paddle, joystick, Koala pad, disk drive, disk, and printer		I	I	R	R	R	R	R	R	E	E
input, output, memory, processing, cusor, menu				I	I	R	R	R	R	E	E
line number, cassette player, cassette, CRT, storage					I	I	R	R	R	E	E
bit, byte, kilobyte, RAM, ROM, CPU, modem, microchip								I	I	R/E	R/E
IV. The student will be aware of the impact that computers have had, and will continue to have on society.											
A. The student will discuss changes in the job market due to computer technology.											
loss of jobs			I	I	R	R	R	R		E	E

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	K	1	2	3	4	5	6	7	8	9	10
high tech vs. industrial economy						I	I	R			
retraining the work force				I	I	R	R	R			
B. The student will discuss changes in our daily living due to computer technology.											
the value of computer skills for future employment				I	I	R	R	R		E	E
use of computers in banks, stores, etc.				I	I	R	R	R		E	E
the speed of information transferral								I		R	R
identify common tasks that are not suited for computers							I	R		E	E
C. The student will discuss the impact of computer games on today's society.											
types of computer games			I	I	R	R	R			A	A
advantages of computer games					I	R	E				
disadvantages of computer games					I	R	E				
V. The student will be able to operate a computer in a self-sufficient manner.											
A. The student will demonstrate proper care of computer hardware	I/A	I/A	A	A	A	A	A	A	A	A	A
B. The student will demonstrate proper care of software.	I/A	I/A	A	A	A	A	A	A	A	A	A
C. The student will demonstrate how to load programs on a computer.											
load a program from a diskette and/or cassette tape		I/A	A	A	A	A	A	A	A	A	A
catalog a diskette						I/A	A	A	A	A	A
recognize an error message, i.e. syntax error, I/O error		I	I	R	R						
D. The student will demonstrate how to save computer programs.											
initialize a diskette							I	R		A	A
rules governing a file name							I	R		E/A	E/A
saving a program							I	R		E/A	E/A

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verifying a save

deleting a file from a diskette

E. The student will use and interact with educational software.

drill and practice programs

simulations

tutorials

problem solving programs

use Bank Street Writer and/or similar word processing software to write and print a hard copy paragraph

F. The student will demonstrate the ability to use the keyboard correctly.

use of special keys, i.e. RETURN OR ENTER, SHIFT, SPACE BAR, ARROW KEYS, BACK SPACE, DELETE, BREAK

use of number keys

use of arithmetic operation keys

use of character keys

VI. The student will be able to explain how a computer functions.

A. The student will explain the advantages and disadvantages of a computer.

speed in processing and storing large amount of data

advantages of branching in computer programs

limitations of computers, i.e. computer must be programmed

difficulties in finding mistakes in programs

mistakes by computer vs. mistakes by programmer

B. The student will demonstrate how to use the computer as a calculator.

K	1	2	3	4	5	6	7	8	[illegible]	CA
						I	R		E/A	E/A
						I	R		E/A	E/A
I/A	I/A	A	A	A	A	A	A	A		
I/A	I/A	A	A	A	A	A	A	A		
		I/A	A	A	A	A	A	A		
			I/A	A	A	A	A	A		
		I/A	I/A	A	A	A	A			
I	I	I	I	I	I	R	R	R	E/A	E/A
I/A	I/A	A	A	A	A	A	A	A	A	A
			I/A	R/A	E/A	E/A	E/A	E/A	E/A	E/A
I/A	I/A	I/A	I/A	I/A	I/A	I/A	E/A	E/A	E/A	E/A
							I	I	R/E	R/E
									I/A	E/A
									I/A	E/A
									I/A	E/A
									I/A	R/E

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	K	1	2	3	4	5	6	7	8	CP	CA
use in addition and subtraction					I/A	R/A	R/A	R/A	R/A	E/A	E/A
use in multiplication and division					I/A	R/A	R/A	R/A	R/A	E/A	E/A
use of parentheses and order of operations								I/A	I/A	E/A	E/A
C. The student will write, store, and retrieve a computer program											
identifying a problem										I/A	R/E/A
planning a logical solution, i.e. developing an algorithm										I/A	R/E/A
flowcharting										I/A	R/E/A
translating into code										I/A	R/E/A
keying a program into a computer										I/A	R/E/A
predicting a program's output										I/A	R/E/A
debugging a program										I/A	R/E/A
storing and retrieving the program										I/A	R/E/A
D. The student will be able to recognize the capabilities and limitations of various types of computers for the purpose of computer selection.										I	I
VII. The student will develop a knowledge of computer applications in various career areas.											
A. The student will illustrate a knowledge of computer-related careers.	I	I	I	I	I	R	R	R	R	E	E
B. The student will discover various ways that computer software is used in job-related areas.	I	I	I	I	I	R	R	R	R	E	E
VIII. The student will acquire operations skills necessary for entry into his/her chosen career or post-secondary educational program.											
A. The student will demonstrate a working knowledge of LOGO programming language.											
screen commands		I	I/R/A	R/A	A	A	A				
color commands		I	I/R/A	R/A	A	A	A				

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procedure and file commands

edit a program

conceive, write, and produce a program

B. The student will demonstrate a working knowledge of B.A.S.I.C. programming language.

control commands,i.e. LIST, RUN, NEW, SCR, CATALOG, LOAD, SAVE, etc.

elementary level program statements,i.e. PRINT, REM, INPUT, LET, GOTO

program statements,i.e. IF-THEN, IF-THEN-ELSE, READ-DATA, etc.

the function of the comma and semicolon with PRINT

arithmetic operators, parentheses, and hierarchy of mathematical operations

floating point notation for numbers

equalities and inequalities,i.e. =, <, >, <=, >=, and <>

editing techniques,i.e. line editing and editing on classroom computers

trailer data and avoiding infinite loops

breaking a program and/or an infinite loop

interative processes i.e. counting loops and FOR-NEXT loops

accumulating and averaging

clearing the CRT using HOME, CLS, or FOR-NEXT

specific display using the TAB function

specific display with PRINT USING

using printers for output

graphics display

drawing a horizontal and/or vertical lines

selecting color

K	1	2	3	4	5	6	7	8	CR	CA
	I	I/R/A	R/A	A	A	A				
	I	I/R/A	R/A	A	A	A				
	I	I/R/A	R/A	A	A	A				
						I/A	I/A	I/A	R/E	R/A
						I/A	I/A	I/A	R/E	R/A
									I/A	R/E/A
						I/A	I/A	I/A	R/E/A	E/A
							I/A	I/A	R/E/A	A
									I/A	R/A
									I/A	R/E/A
						I/A	I/A	I/A	R/E/A	E/A
									I/A	R/E/A
				I/A	I/A	I/A	R/A	R/A	E/A	A
									I/A	R/E/A
									I/A	R/E/A
						I/A	I/A	I/A	R/E/A	A
									I/A	R/E/A
									I/A	R/E/A
						I/A	I/A		R/E/A	E/A
						I	I		R/E/A	E/A
						I	I		R/E/A	E/A
						I	I		R/E/A	E/A

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	K	1	2	3	4	5	6	7	8	CP	CA
drawing a simple design							I	I		R/E/A	E/A
sound										I	I
basic functions,i.e. ABS, SQR, INT, RND, etc.										I/A	R/E/A
user defined functions,i.e. DEF FNA and using statements											I/A
nested IF-THEN										I/A	R/E/A
nested FOR-NEXT										I/A	R/E/A
compounding program statements										I/A	R/E/A
simple variables, string variables, and array variables										I/A	R/E/A
the DIM statement										I/A	R/E/A
two or more dimensional arrays										I	R/E/A
programs that select the smallest or largest from a list											I/E/A
numerical and alphabetical sorts											I/E/A
a binary search of an ordered list											I/E/A
matrices on the computer,i.e. the DIM statement, row, column, and diagonal sums, locating a specific element											I/E/A
multiplication of a scalar and a matrix											I/E/A
multiplication of a vector and a matrix											I/E/A
operations with two or more matrices,i.e. addition, subtraction, multiplication											I/E/A
subroutines,i.e. GOSUB, ON A GOSUB, RESTORE, MENU programs											I/E/A
sequential files											I/E/A
random-access files											I/E/A
using a disk operating system and its commands										I/A	R/E/A
application programs										I/A	R/E/A

COMPUTER LITERACY COURSE OF STUDY

EVALUATION STATEMENT

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Evaluation of the students' progress in the goals and objectives outlined in the Computer Literacy Course of Study will be accomplished by use of the following:

observations
assignments
quizzes
tests
programs
exams

K	1	2	3	4	5	6	7	8	9	10
X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X
				X	X	X	X	X	X	X
				X	X	X	X		X	X
							X		X	X
							X		X	X